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NUTRITION FOR EVERY DAY USE

**A Handbook of
Teaching Aids**



Nutrition information in this booklet has been accepted by the Council on Foods and Nutrition of the American Medical Association.

"Man must eat to be well. What man does or does not eat has much to do with health—with recovery from ill health, with the maintenance of good health, and, as nutrition researches have shown, with the further improvement of what is already considered good health."¹ Dr. Fredrick J. Stare, Schools of Medicine and Public Health, Harvard University.

→ The material in this booklet is designed to aid those in fields of public health and family life education in interpreting to families and individuals day-to-day uses of foods for nutritional well-being and higher levels of health.

¹From *Medical and Public Education in Nutrition*. Nutrition Reviews, January 1947.

NUTRITION FOR EVERY DAY USE

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Discovering the Family Food Habits

Sometimes we forget how much may be gleaned of the food customs in a home by small talk with the mother, father, children, or others involved. Take advantage of this opportunity . . . chat about food . . . cultivate a "seeing eye" when you are paying routine visits or making calls for other purposes. Too often the term "nutrition problem" suggests falsely a job too big to be done without detailed and exhaustive study. Too often an interview is visioned only as two people in a formal question-answer scene. But the friendly comment or question on obvious mealtime preparation or on current food matters brings natural response.

"What are you cooking that smells so good?" "Do you cook it often?" "Are you planning a dessert with your meal tonight?" "Do the children usually eat their breakfast at this time of day?" "Do you find it easy to pack lunches for your husband these days?"

Questions such as these can act as pivots for others that progress toward an excellent picture of the food habits. Before you realize it you know whether there is a nutrition problem here. You have not frightened either yourself or the family with that term "problem." Your interview has been simply a pleasant chat. But as a result you come away with some idea where you might begin suggestions for improvement.

You have answers to your leading questions. You know whether a problem exists and something of what the problem is. You have clues to why the problem exists. Now, how are you going to proceed?

REMEMBER KEEN OBSERVATION INFORMAL TALK

When you have discovered some of the food habits, how can you evaluate them?

Is the food in the home inadequate, or is it just different from what **you** are used to eating?

Mr. and Mrs. James, Peggy, 15 years, and Johnnie, 11 years, ate these meals today. What can you tell Mrs. James about the good points and the poor points in her planning?

BREAKFAST

Doughnuts
Ready-prepared cereal
with milk - sugar
Coffee - cream - sugar
for Mr. and Mrs. James

LUNCH

Jelly sandwiches
Peanut butter
sandwiches
Cookies
Coffee - cream - sugar
for Mr. and Mrs. James

SUPPER

Pot roast
with potatoes,
carrots, onions
Canned pear salad
Cupcakes
Tea - milk

How do the James' meals measure up?

These are the groups of foods recommended for regular use.

These are the amounts recommended for daily meal plans—a typical dietary pattern.

These are the amounts eaten by the members of the James family.

MILK or equivalent	1 pint adult 1 quart child	½ cup each adult 1 ½ cups each child
VEGETABLES		
Potato	1 serving (½–⅔ cup)	1 serving each
Green, leafy, yellow	1 serving (½–⅔ cup)	½ serving each
Other	1 serving (½–⅔ cup)	½ serving each
(One of these raw)	1 serving (½–⅔ cup)	None
FRUITS		
Citrus, tomato	1 serving (½ cup)	None
Other	1 serving (½ cup)	1 serving each
EGGS	1 (at least 3–4 a week)	Same in cake and cookies
LEAN MEAT or alternate	1 serving (2–3 oz.)	Pot roast, peanut butter
CEREAL PRODUCTS		
Whole-grain or enriched	At least 2 servings	What is the cereal and bread?
FATS rich in vitamin A	2 tablespoons or more	Cream. Is there butter in sandwiches?

Foods in the groups taken daily in recommended amounts, supply most of the National Research Council's dietary recommendations (Appendix, page 30) except in calories. The colored charts on pages 18 and 19 can be used to show how the food groups build up to recommendations.

What do the James' meals need?

MILK 1½ cups more for each adult; 2½ cups more for each child. The James family seems to be using about 1 quart of milk a day. Recommended amounts for the family are 3 quarts or the equivalent.

VEGETABLES About ½ serving more of green, leafy, or yellow and ½ another serving of vegetable, per person. The family seems to eat about half recommended amounts, but few raw vegetables.

FRUIT The James' meals need citrus fruit or tomatoes. This omission is of special concern with lack of greens or cabbage.

EGGS More eggs—unless eggs are served other days. Are they?

CEREAL PRODUCTS Whole-grain or enriched cereals and breads—unless these kinds are now used regularly. Are they? Are breads made with milk?

FATS RICH IN VITAMIN A More **may** be needed. Inquire further.

This is a simple way to estimate nutritional adequacy of menus. Which food values are low in Mrs. James' meals? Check by food group contributions on pages 6 to 11.

While you and Mrs. James are talking, you may find that she has food problems because of family likes and dislikes. Mr. James says "greens" may be all right for some folks but not for a working man. The family likes fruit but can't afford much when it's so expensive. When Johnnie and Peggy were little, Mrs. James saw to it they drank milk at every meal, but she doesn't use as much now. Peggy thinks it makes her fat. Johnnie won't stay at the table long enough to eat even what's on his plate. He rushes out to play ball—but the big boys won't let him on the team. Everyone has cereal and milk for breakfast, though—and the children will drink the rest of the quart of milk some time during the day.

As you talk together, Mrs. James senses your sincere interest in food, and naturally she is pleased that you notice good points in her planning. She begins to feel comfortable about talking with you of her difficulties in pleasing her family on the money she has to spend for food.

What can be gained from the menu evaluation?

Of course you will not draw hasty conclusions from your evaluation of the James' menu. Nor will you try to make a medical diagnosis of any specific dietary deficiency.

Menu evaluation does point the way, however, to risks which Mrs. James is taking with the health of her family.

Naturally you won't give Mrs. James a classroom discussion of the functions of the nutritive essentials. You do want to stimulate her interest, though, and get her cooperation in carrying out suggestions you make for improvement. Your approach may be through her concern for her family.

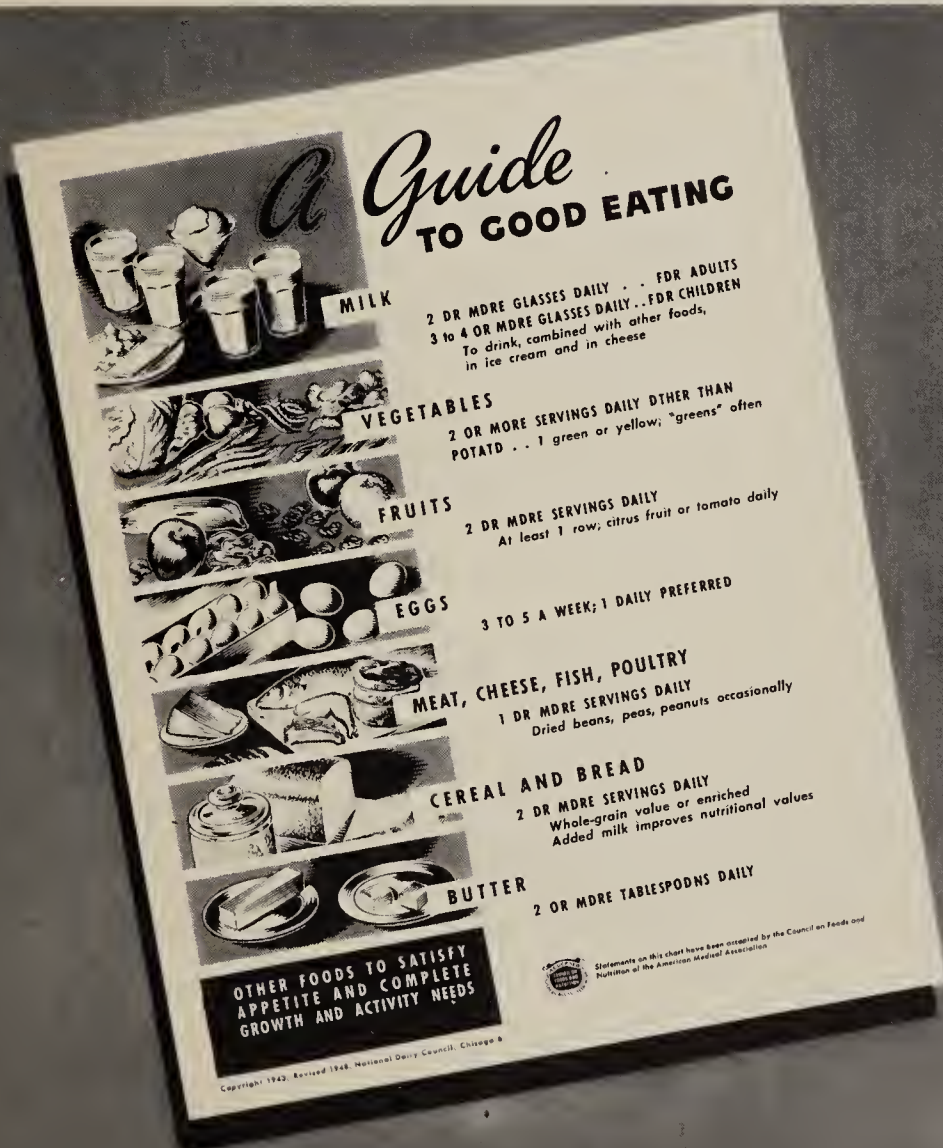
The meal pattern provides little ascorbic acid (vitamin C), questionable amounts of B vitamins, little calcium, and possibly too little vitamin A. Diagnosis of a dietary deficiency in an individual comes only from the medical examination with findings of related clinical symptoms. But the low food values in the family's meals may have something to do with the fatigue that worries Mr. James even though he eats lots of "meat and starch and sugar," which he says should give him energy. Such meals perhaps are one reason Mrs. James finds she gets "aggravated so easy and just can't seem to help it." Johnnie is not only underweight—he does not have a good appetite and is not growing the way a boy of eleven should grow. Peggy is overweight and critical of the meals at home because they are too "starchy." She says she can't lose weight unless she just stops eating altogether. She brought home from school some printed sheets about low-calorie diets. Mrs. James cannot understand Peggy's impatience with the family meals—nor all this about vitamins and minerals and protein. But she does want Peggy to be attractive. And she does know that her family isn't too happy at mealtimes—nor between meals.

Mrs. James is ready for suggestions. They must be ones she can use without confusing her. Can Peggy share? She may be proud to be responsible for salads. Even Mr. James will want to try what Peggy makes! Mrs. James may be willing to make more milk dishes. Go slowly with suggestions. Nothing succeeds like a little success. Be specific in food information.

Can you help Mrs. James make the most of what she has?

If Mrs. James can read and if she understands everyday food terms, your procedure is simplified. In any situation, you can use pictures, charts, recipes, and simple information. Select and plan whatever you use with the family's need in mind.

As soon as you and Mrs. James chat easily about food, she may welcome a food guide such as is shown below. In color, such a guide is decorative, too. You may find it on Mrs. James' wall the next time you call.



How can you help Mrs. James understand the importance of the food groups in everyday meals?

You will want to discuss the food groups with Mrs. James. Each group consists of foods which are similar in their contribution to good nutrition and, therefore, good health. Foods within each group are largely interchangeable in meals.

Foods supply calories for energy and contribute the well-known nutrients—protein, minerals, and vitamins—for building tissue, skeletal structure, and for regulating all body functions. There are unknown nutrients also present in food, so emphasis must always be on foods rather than on individual nutrients.

THE GRAPHS The bar graphs on the following pages show contributions which average servings of representative foods in each group make to daily nutritive needs of an adult. Many foods have almost the same values. Such foods have been averaged together. For instance, it makes little difference in food value whether Mrs. James uses turnip greens, or broccoli, or some other leafy green. But it is important for her to know that leafy, green, and yellow vegetables give more value than other vegetables. (Foods which are used commonly are listed by food groups in the Appendix, page 36.)

For convenience, the nutrients charted in the bar graphs have been indicated by symbols as follows:

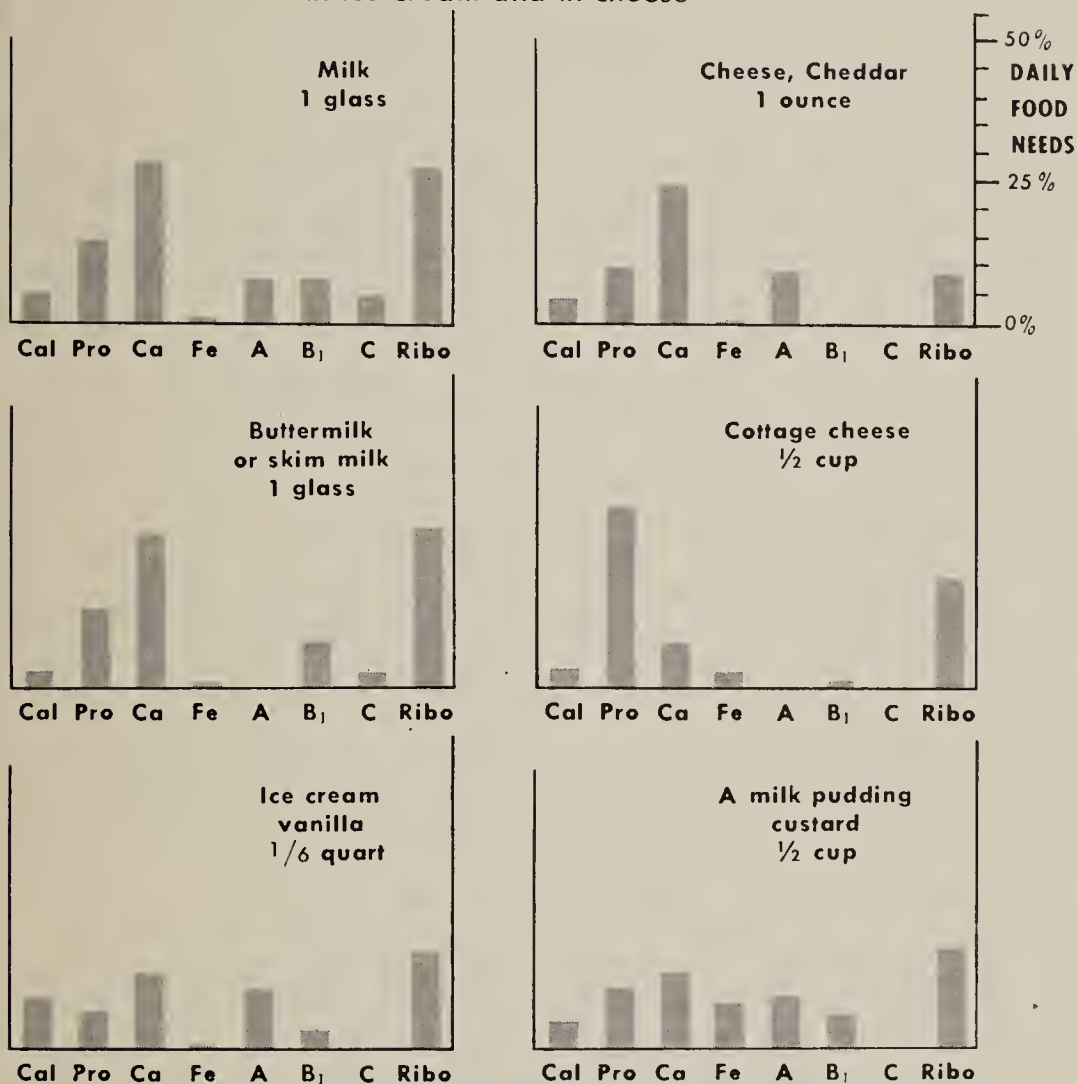
Calories.....Cal	Calcium.....Ca	Vitamin A.....A	Ascorbic Acid...C
Protein.....Pro	Iron.....Fe	Thiamine.....B ₁	Riboflavin....Ribo

Other minerals and vitamins are not shown. They are needed but are believed to be adequately supplied by recommended use of foods in the food groups.

The protein bars indicate value in quantity only. The quality of protein depends upon its amino acid content. The best sources of the indispensable amino acids are milk, cheese, eggs, lean meat, fish, poultry. Combinations of high quality protein with cereal and vegetable protein are desirable.

MILK

2 or more glasses daily . . . for adults
 3 to 4 or more glasses daily . . . for children
 To drink, combined with other foods,
 in ice cream and in cheese

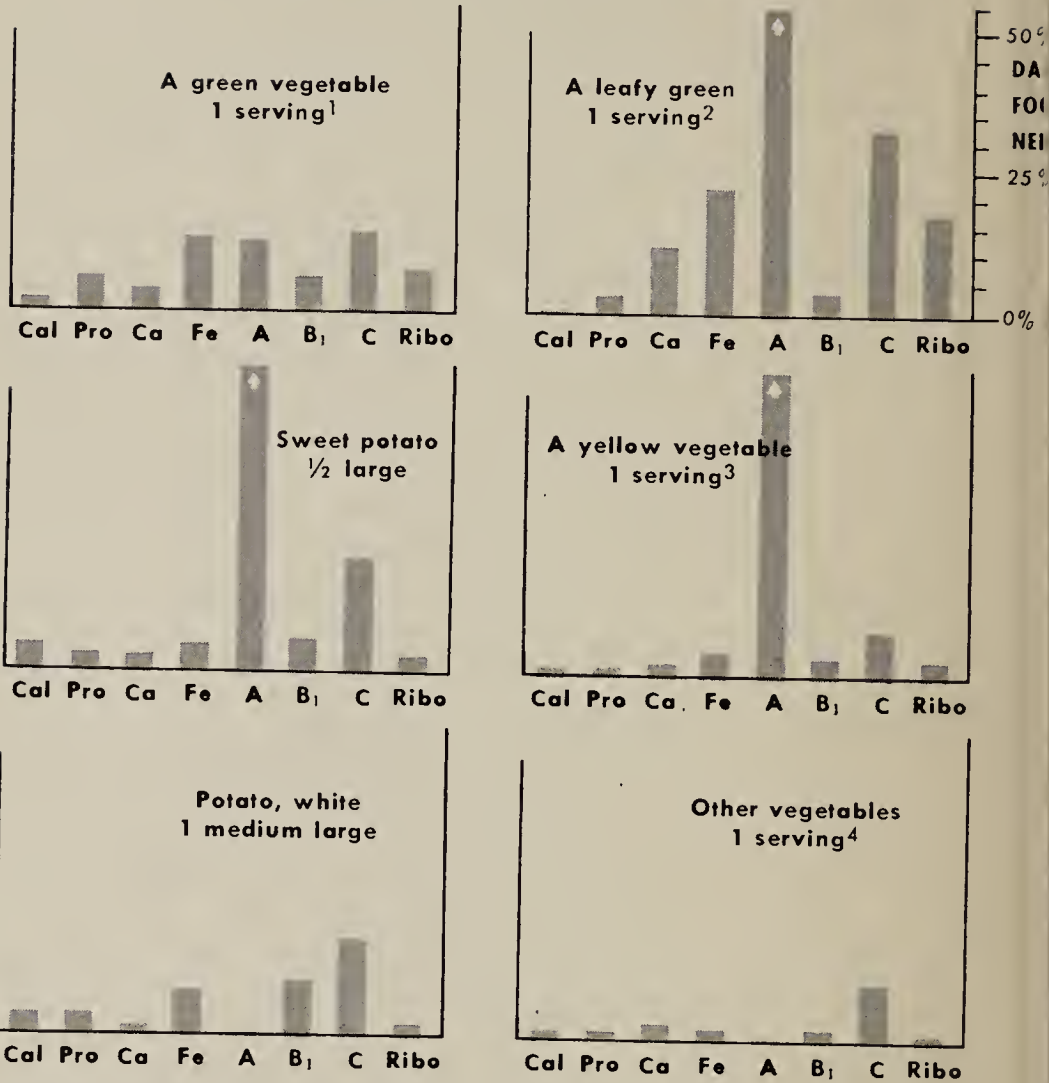


Contribution to day's food needs, Moderately Active Woman, N.R.C. Allowances.

Evaporated and dried milks have about the same values when reconstituted as the corresponding fluid milk.

VEGETABLES

2 or more servings daily besides potato
1 green or yellow; "greens" often

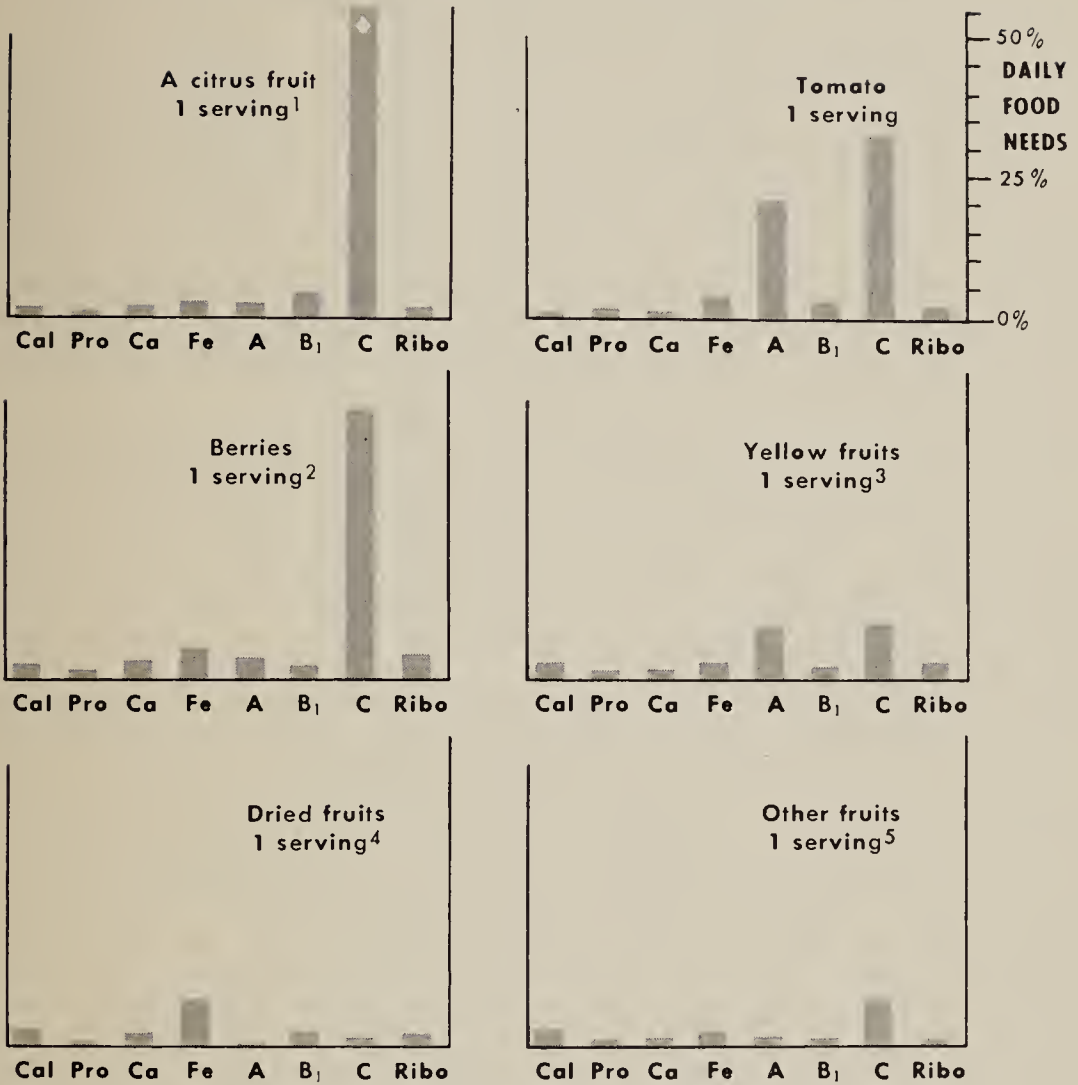


Average servings: $\frac{1}{2}$ to $\frac{2}{3}$ cup—see Appendix, page 34.

Foods averaged: ¹Green beans and peas, cooked. ²Kale, spinach, turnip, or other greens, cooked. ³Winter squash and carrots, cooked. ⁴Cooked cauliflower, corn, parsnips, beets, eggplant, onions, and others commonly used raw—celery, cucumber, lettuce, and cabbage.

FRUITS

2 or more servings daily
At least 1 raw; citrus fruit or tomato often

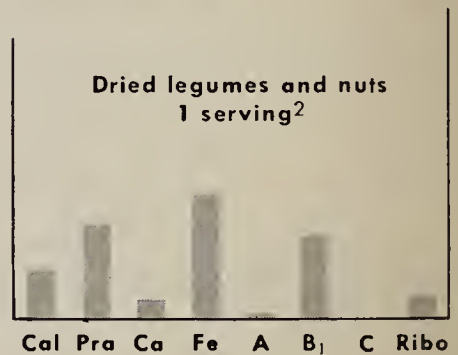
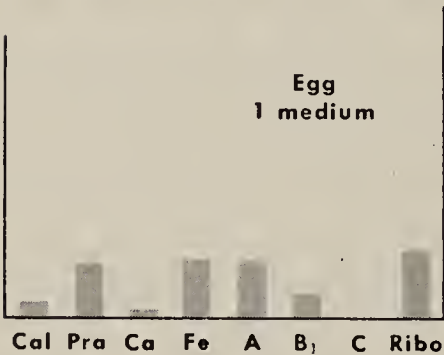
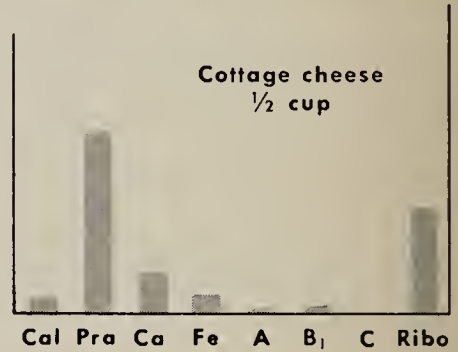
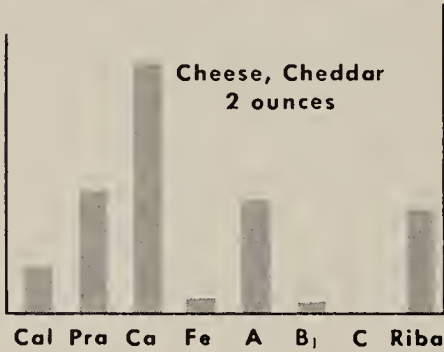
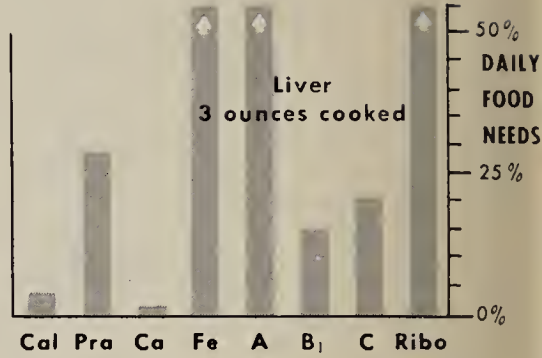
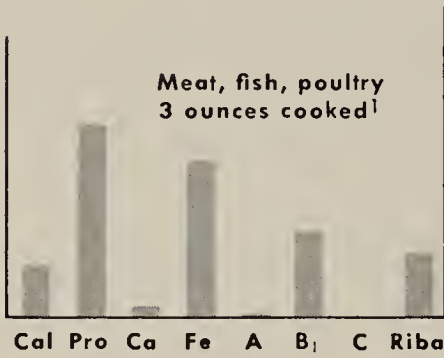


Average servings: $\frac{1}{2}$ cup or equivalent—see Appendix, page 34.

Foods averaged: ¹Orange, grapefruit, lemon. ²Strawberries, blueberries, other berries, fresh. ³Peaches, apricots, plums, fresh, canned, dried; banana. Cantaloupe, not averaged, is high in vitamins A and C. ⁴Other than yellow—dates, figs, apples, raisins. ⁵Others, fresh, canned, unsweetened.

MEAT, EGGS, AND ALTERNATES

Eggs . . . 3 to 5 a week; 1 daily preferred
 Meat, cheese, fish, poultry . . . 1 or more servings daily
 Dried beans, peas, peanuts occasionally

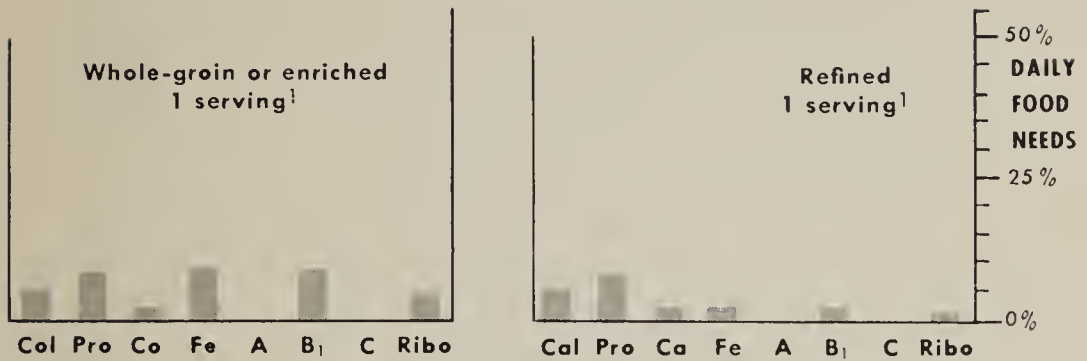


Foods averaged: ¹Five servings beef, veal, lamb, poultry; 1 serving ham, pork; and 1 serving fish. ²Dried beans or peas, 1 cup cooked, and nuts, 1 serving—2 tablespoons peanut butter, 36 peanuts, 8–15 walnuts, etc.

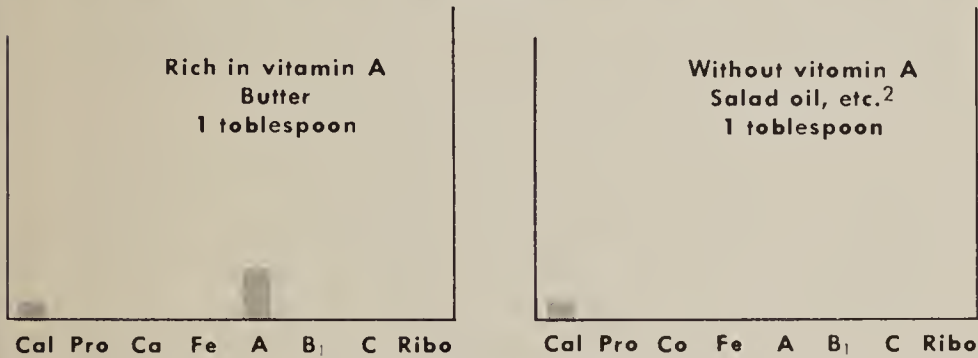
CEREAL AND BREAD

2 or more servings daily

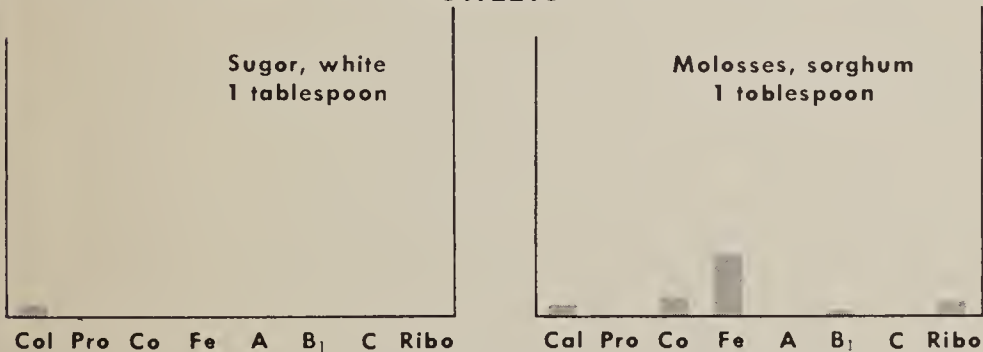
Whole-grain value or enriched; breads made with milk



FATS



SWEETS



Foods averaged: ¹Two 1-ounce slices bread, or 1 slice and $\frac{1}{2}$ cup cooked cereal, or 1 slice and 1 cup prepared cereal, or the equivalent. ²Two slices bacon, 1 cubic inch salt pork, 1 tablespoon fat, $1\frac{1}{2}$ tablespoons French dressing.

Does Mrs. James need suggestions for storing and cooking foods?

Mrs. James may not be familiar with common precautions—things which you assume are natural to do. Planning menus in advance by food group classifications is a big forward step. But part of its value is canceled out if facilities for storage and preparation are not adequate or are not used well.

You may want to suggest these precautions to Mrs. James:

Storage

1. Store perishable foods including most vegetables and fruits in the refrigerator. If there is little or no refrigerator space, is it possible to store in covered containers at a cold window?—in a basement room in hot weather? Or should the food be purchased in smaller quantities? Usual kitchen temperatures and changes in humidity lessen vitamin content.
2. Milk should be stored promptly in a dark, cool place—a refrigerator if possible. When exposed to light and warmth—outdoors or in—milk loses some riboflavin and will not keep as satisfactorily. It should be kept covered and should be used quickly if cold storage is not possible.
3. Pasteurized milk should be used. If it cannot be obtained, raw milk should be pasteurized at home, or boiled three minutes, then cooled quickly and refrigerated.
4. Fresh vegetables will be crisp if kept in a tightly covered pan or dish while they are in a refrigerator.
5. Fresh or canned fruit and vegetable juices keep their vitamin C content better if poured into tightly covered containers and kept cold. Salads and fruit desserts should be covered while in the refrigerator.
6. Leftover food should be put in a tightly covered jar or pan and kept in the refrigerator or another cold place. Leftovers should be used up quickly.

Preparation

1. When foods are boiled, it is best to use small amounts of water. (Specific directions may be necessary.) Steaming and baking preserve more of the water soluble minerals and vitamins. Can the home equipment be adapted to these methods?
2. Water from cooked fruits, vegetables, and meats should be used in soups, sauces, gravies or, in the case of fruits, served with the fruit. Cooking liquids and juices contain valuable minerals and vitamins.
3. Peeling should be done shortly before food is used rather than soaking the peeled food in cold water for a period of time. Some foods may be cooked with or without skins.
4. To make meals more nutritious: Use short cooking periods for fresh foods; start with boiling instead of cold water; cook only until tender.
5. Keep pans covered when cooking with water—to shorten the cooking time and decrease vitamin loss. Even a pie tin can be used for a lid.
6. When heating milk, it is desirable to use an opaque, covered pan. This helps save milk's riboflavin.
7. Cook milk and cheese dishes at low temperatures to prevent scorching, curdling, or stringiness.
8. Preparation for meals should be planned so that foods for the meal all are ready at the same time. Food which stands on the range, work shelf, or table for long periods will be less appetizing and less nutritious.

Changes in storage procedure often can be accomplished immediately. Mrs. James can see the advantages in keeping food fresh and in avoiding waste. However, it may take much longer for her to adjust herself—and her family—to any change in ways of preparing foods. New cooking methods need to be introduced one at a time. And resistance can only be broken down if the new method produces flavorful and attractive food.

Mrs. James may find that the money she has to spend for food does not go as far as it used to.

She may appreciate suggestions for daily menu plans which come within her food budget. But before you and Mrs. James talk of specific plans, it may be helpful to discuss certain general practices that will apply in all her meal planning.

For example, she should know that whole-grain or enriched types of bread and cereal products should be used in all meals—and that breads made with milk, and cereals cooked or served with milk are desirable combinations. She can use these to advantage in generous amounts for lower cost menus.

She should understand, too, that when fruits are expensive she may use more vegetables instead, especially raw ones. By suggesting alternate and seasonal sources of vitamin C and vitamin A rich fruits and vegetables, you can help Mrs. James hurdle this common cost problem. (See graphs pages 24 and 25.)

Two typical patterns at two cost levels are given here. With understanding of your food groups and dietary pattern, you can plan other combinations for meal patterns.

AT MODERATE COST

Breakfast

Whole fruit:

citrus, other fresh
or stewed, or
cooked dried fruit

Breakfast cereal with

milk
sweetening if desired

Toast or other bread

Egg if not in other meals

Coffee for adults with milk or cream

Milk or

cocoa for the children

AT LOWER COST

Breakfast

Breakfast cereal with milk

sweetening if desired

Toast or other bread

Egg if not in other meals

Coffee for adults with milk

Milk or

cocoa for the children

AT MODERATE COST

Noon Meal

A cream soup
Sandwich, or
salad, or
other entree,
made with meat
or meat alternate
Raw vegetable,
a large serving if
breakfast fruit was
not citrus
Bread in some form,
if main dish is not
a sandwich
Simple dessert
Milk

Night Meal

Lean meat or alternate,
chosen from moderately
priced groups, good
but not choice grades
of meat
Potatoes
Cooked vegetable
Salad,
vegetable or fruit
Dessert
fruit if salad is
not a fruit; or
other dessert if
there are 2 servings
of fruit in the menu
Milk
Tea or coffee for adults
if desired

AT LOWER COST

Noon Meal

Soup,
either stock or milk
with vegetables
Main dish,
hot, as stew, eggs,
baked beans,
creamed meat,
macaroni and cheese, or
a sandwich made with
meat alternate
Bread in some form,
if main dish is not
a sandwich
Greens, slaw, or citrus fruit
Milk

Night Meal

Lean meat or alternate,
chosen from low cost
group; commercial or
good grades of meat
Potatoes
Cooked vegetable,
preferably green,
leafy, or yellow
Raw vegetable
Simple dessert,
that adds fruit, milk,
and/or eggs, such as
prune pudding, bread
pudding with raisins,
fresh orange gelatin
Milk
Tea or coffee for adults
if desired

A pattern for meals can become tiresome. This may be avoided by interchanging noon and night combinations and varying ways of preparation.

Mrs. James has four average appetite

Mrs. James needs to know how many servings there are in a pound, a peck, a quart, in cans of different sizes.

SOME COMMONLY USED FOOD ITEMS	SERVINGS PER UNIT OF PURCHASE
Dairy Products	
Milk	4 cups in 1 quart
Cream	4 ($\frac{1}{4}$ cup) servings in $\frac{1}{2}$ pint
Cottage cheese	4 ($\frac{1}{2}$ cup) servings in 1 pound
Cheese	12 to 16 (1 oz.) slices or cubes in 1 pound
Vegetables and Fruits	
Potatoes	3 medium or 4 small servings in 1 pound
Root vegetables; vegetables and fruits with little waste such as beans, tomatoes, apples	3 medium or 4 small servings in 1 pound
Pod vegetables; vegetables and fruits with heavy skin such as peas, squash, melon	2 medium or 3 small servings in 1 pound
Leafy vegetables, served raw served cooked	6 to 8 servings in 1 pound 2 to 3 servings in 1 pound
Canned vegetables and fruits	4 servings in a No. 2 can 5 to 6 servings in a No. 2 $\frac{1}{2}$ can
Frozen vegetables and fruits	3 to 4 servings per 12 oz. package
Oranges	12 servings whole fruit to 1 dozen 6 servings juice to 1 dozen 4 heavy small oranges to 1 pound
Grapefruit	2 servings per grapefruit— range in weight, $\frac{1}{2}$ to 2 pounds
Dried fruit	8 to 12 servings in 1 pound
Berries	2 medium servings in 1 pint

to satisfy. How much will she buy?

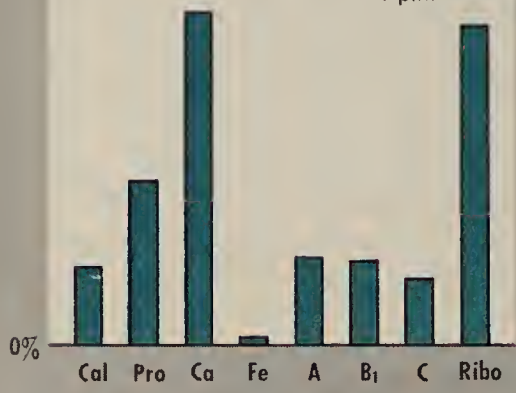
The amount and the kind of storage space determines for how long a period she can buy at one time.

SOME COMMONLY USED FOOD ITEMS	SERVINGS PER UNIT OF PURCHASE
Eggs	12 servings in 1 dozen, if 1 egg per serving; 2 to 3 eggs are used per serving as meat alternate
Meat	
Lean meat without waste	4 to 5 servings in 1 pound
Lean meat with bone and some waste	2 to 3 servings in 1 pound
Chops	4 to 5 chops in 1 pound
Legumes and Nuts	
Dried beans or peas	8 to 16 servings in 1 pound— dry weight
Peanut butter	16 rounding tablespoons in 1 pound
Cereal and Bread	
Cereals, to be cooked, or prepared ready to eat	16 (1 oz.) servings in 1 pound
Bread	16 to 24 slices in 1-pound loaf
Fats	
Butter, cream cheese, other fats	32 tablespoons or 48 pots in 1 pound
Sweets	
Sugar	32 tablespoons or 96 teaspoons in 1 pound
Jellies and jams	24 tablespoons in 1 pound
Accessories	
Coffee	40 to 50 cups (prepared) in 1 pound
Tea	140 to 160 cups (prepared) in 1 pound

100%
DAILY
FOOD
NEEDS



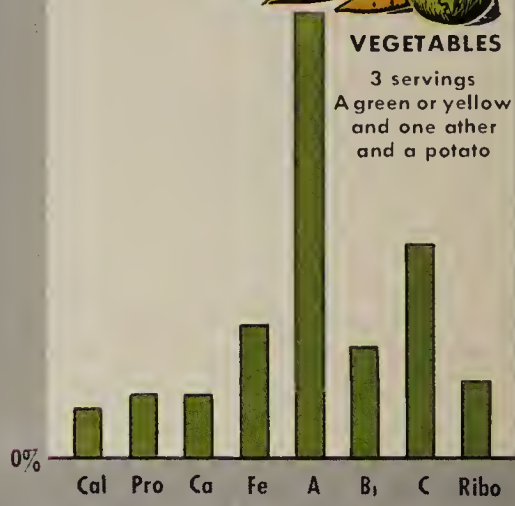
MILK
1 pint



100%



VEGETABLES
3 servings
A green or yellow
and one other
and a potato

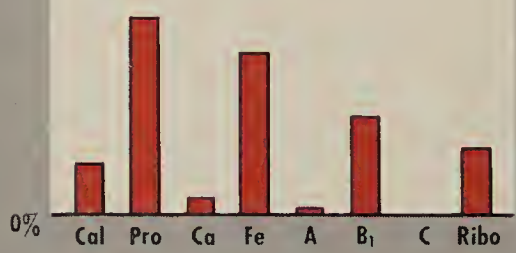


HOW THE FOOD GROUPS THE NUTRITIVE NEEDS

100%
DAILY
FOOD
NEEDS



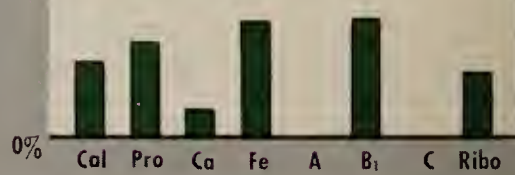
MEAT & ALTERNATES
Cheese, fish, poultry, etc.
1 serving



100%



CEREAL & BREAD
Whole-grain or enriched
Breads made with milk
2 servings



Minimal recommended amounts of these foods almost
these same foods and others, to satisfy appetite and

100%

**FRUITS**

2 servings
A citrus or tomato
and one other

0%

Col Pro Ca Fe A B₁ C Ribo

100%

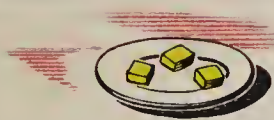
**AN EGG**

0%

Col Pro Ca Fe A B₁ C Ribo100%
DAILY
FOOD
NEEDS

COMBINE TO MEET
OF AN ADULT

100%

**BUTTER**

2 tablespoons

0%

Cal Pro Ca Fe A B₁ C Ribo

100%

0%

Cal Pro Ca Fe A B₁ C Ribo100%
DAILY
FOOD
NEEDS

All nutritive needs other than calories. More of
and activity, will complete the day's needs easily.

Can you give Mrs. James the right answers to these questions?

Can I count on any food other than meat for animal protein?

Yes. Other sources are eggs, milk and cheese, fish and poultry.

When I am trying to lose weight, shouldn't I stop drinking milk?

No. The caloric value of whole milk is approximately 170 calories per cup. These calories should be planned as part of the 1000, 1200, or 1500 calories which the low calorie diet allows, because of milk's excellent content of the protective essentials. If fewer than 340 calories can be afforded out of the total allowance, use buttermilk or skim milk (1 cup provides about 90 calories) and increase the green and yellow vegetables for vitamin A.

Does toast really have fewer calories than bread?

No. Bread loses chiefly water in toasting. Slice for slice, the caloric value is the same.

Should adolescent children eat so much? Some of them never seem to get filled up.

Yes. At this age, boys and girls grow rapidly and are very active. They usually need more food than do either of the parents. (An exception would be if the father is doing heavy manual labor.)

Can jelly be used as a substitute for butter?

No. Jelly will spread on bread just as will butter, but the values are altogether different.

Is it true that fish and milk should not be eaten together?

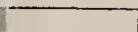
No. There is nothing in either of these foods to make them a dangerous combination unless they are individually contaminated. Excellent ways of preparing fish include baking in milk, serving in a cream sauce, or as a milk chowder.

Our family eats lots of vegetables and fruit. Do we still need to drink milk for the calcium?

Yes. These bar graphs show you that a pint of milk supplies more of an adult's daily need for calcium, and a quart more of a child's need, than do all the other foods ordinarily eaten in a day—including 5 servings of fruit and vegetables. Your family would find it practically impossible to eat enough vegetables and fruit to supply the need for calcium.

Calcium in 1 pint of milk

| other foods¹



DAILY CALCIUM NEED OF ADULT

Calcium in 1 quart of milk

| other foods¹

DAILY CALCIUM NEED OF ADOLESCENT BOY

¹Calcium supplied in other foods includes the calcium in 3 average servings vegetables, 2 of fruit, an egg, 1 serving meat, and 2 servings bread and cereal.

If our meals contain all the food groups except one or two, aren't they "pretty good" meals?

No. Not unless those foods omitted in one day's meals are included liberally within the next few days. We cannot say your meals are poor if you omit milk or green and yellow vegetables or citrus fruits one day and take liberal amounts in the next few days. On the other hand, neither can we say that they are "pretty good" if you skip such foods some times and do not make up for them. The important thing to keep in mind is that no one food group alone assures good nutrition. Each nutrient is so dependent upon others for its proper use that we cannot judge meals on separate nutrient values. For instance, energy (caloric value) is not released completely from food without certain minerals and vitamins present. Calcium and phosphorus are not used to full advantage for bones and teeth without vitamins and protein. Iron to be used properly must be supported by protein.

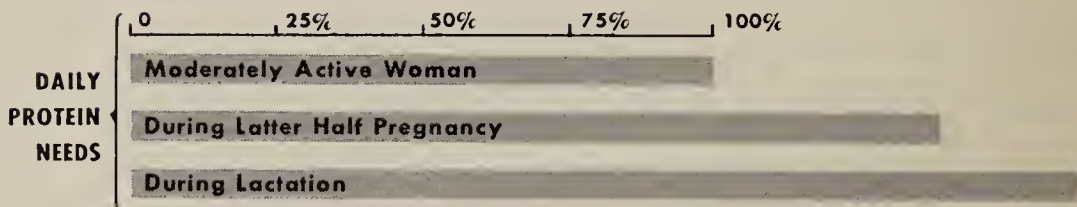
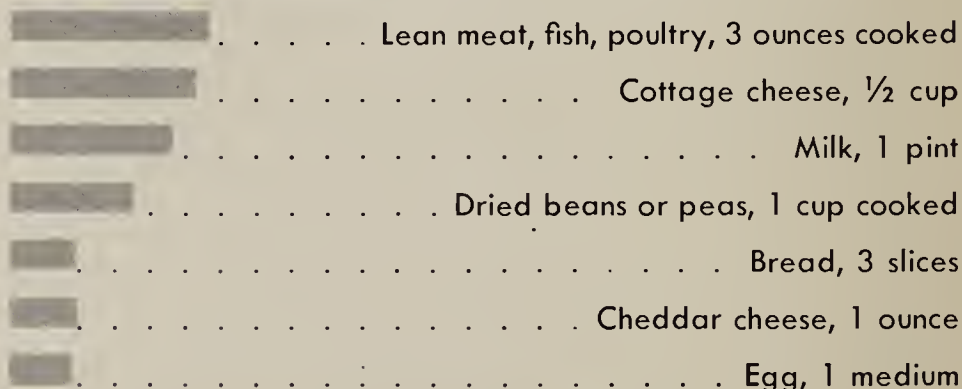
Study of interrelated functions of nutrients is bringing us more and more to the practical application of nutrition, the emphasis upon a variety of natural foods for both their known and unknown contributions.

What alternate food sources of essential nutrients can you suggest to Mrs. James?

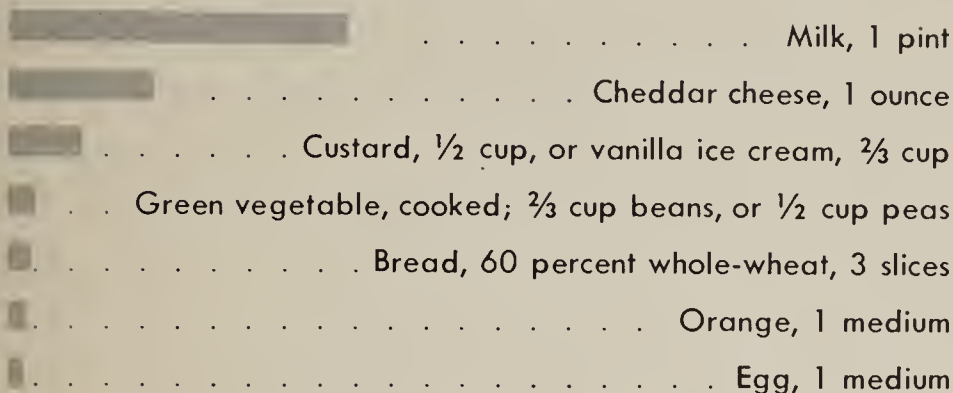
The graphs on this and the following pages show how average servings of some familiar foods compare in their contribution to a woman's daily need for specific nutrients. Mrs. James, Mr. James, Peggy, and Johnnie need the same nutrients. The differences are largely a matter of quantity related to size, activity, and growth. You see these relationships in the National Research Council's Dietary Allowances (Appendix, page 30).

If one food is not available or is very expensive, how much of another food shown in the graph should be used to give a comparable nutrient value? For example, if $\frac{1}{2}$ cup of orange juice is too expensive, how much grapefruit juice or how much tomato juice should be used to give a similar amount of vitamin C? (See "Ascorbic Acid Contributions of Common Foods," page 25.) Or, for example, how many ounces of Cheddar cheese or how many eggs should be used to provide about the same amount of protein as a medium serving of meat?

PROTEIN CONTRIBUTIONS OF COMMON FOODS



CALCIUM CONTRIBUTIONS OF COMMON FOODS



DAILY
CA
NEEDS

0 25% 50% 75% 100%

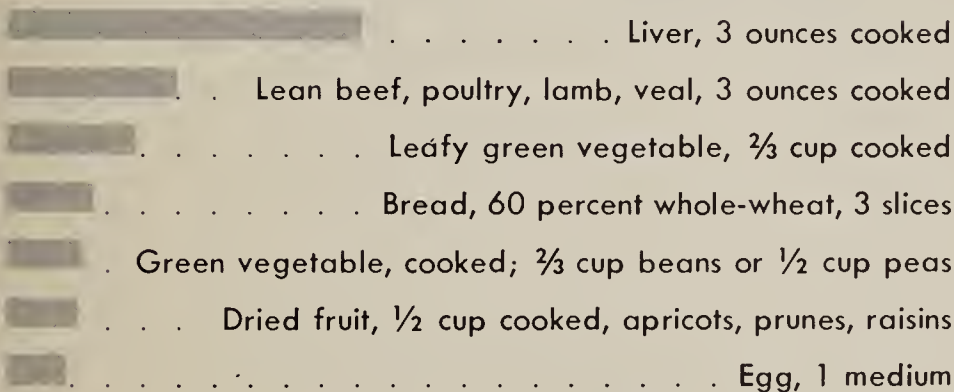
Moderately Active Woman

During Latter Half Pregnancy

During Lactation¹

¹Daily need 2 times that of moderately active woman.

IRON CONTRIBUTIONS OF COMMON FOODS



DAILY
IRON
NEEDS

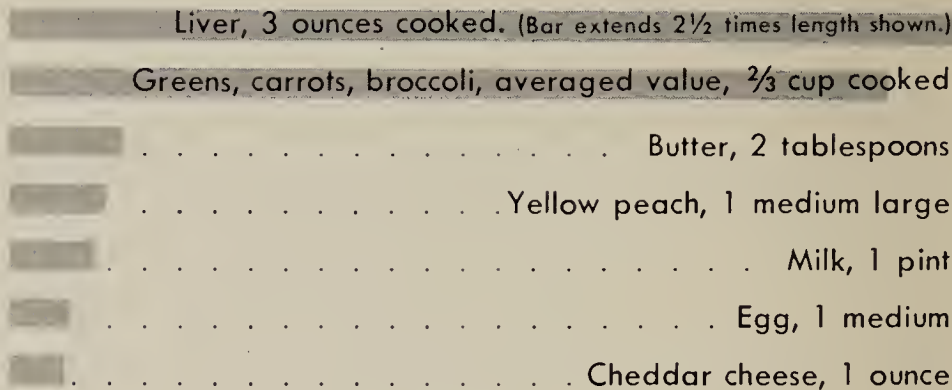
0 25% 50% 75% 100%

Moderately Active Woman

During Latter Half Pregnancy

During Lactation

VITAMIN A CONTRIBUTIONS OF COMMON FOODS



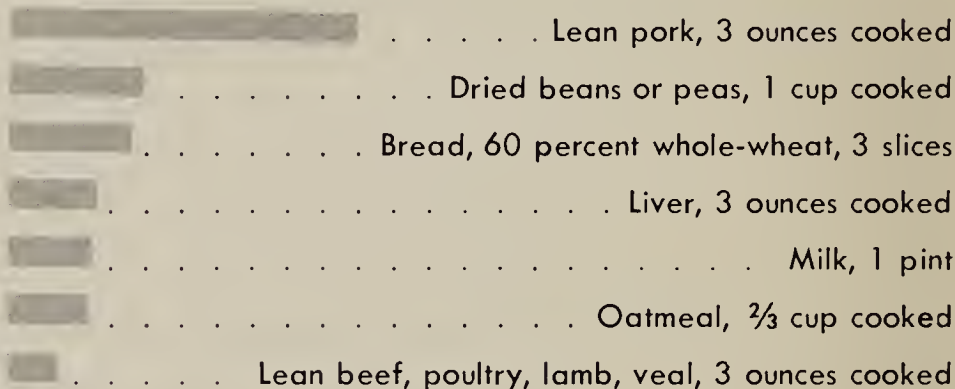
DAILY
VIT A
NEEDS

Moderately Active Woman

During Latter Half Pregnancy

During Lactation

THIAMINE CONTRIBUTIONS OF COMMON FOODS



DAILY
THIAMINE
NEEDS

Moderately Active Woman

During Latter Half Pregnancy

During Lactation

ASCORBIC ACID CONTRIBUTIONS OF COMMON FOODS

	Orange, 1 medium or ½ cup juice
	Grapefruit, ½ medium or ½ cup juice
	Cabbage, ½ to ¾ cup, raw
	Leafy green vegetable, ⅔ cup cooked
	Tomato, 1 medium or ½ cup juice
	White potato, 1 medium large cooked
	Pineapple juice, ½ cup

AILY
IT C
EEDS

0 25% 50% 75% 100%

Moderately Active Woman

During Latter Half Pregnancy

During Lactation¹

¹ Daily need 2 1/7 times that of moderately active woman.

RIBOFLAVIN CONTRIBUTIONS OF COMMON FOODS

	Liver, 3 ounces cooked
	Milk, 1 pint
	Leafy green vegetable, ⅔ cup cooked
	Lean meat, fish, poultry, 3 ounces cooked
	Egg, 1 medium
	Bread, 60 percent whole-wheat, 3 slices
	Dried beans or peas, 1 cup cooked

AILY
RIBO
EEDS

0 25% 50% 75% 100%

Moderately Active Woman

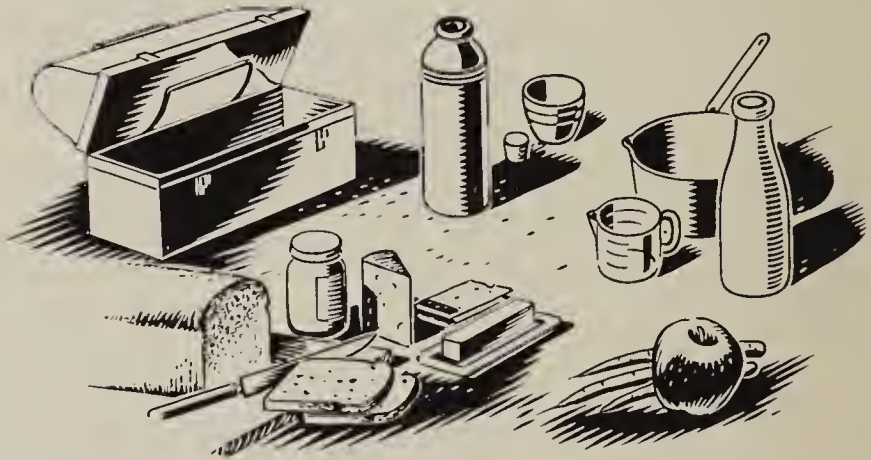
During Latter Half Pregnancy

During Lactation

The James family illustrates many of the situations you meet—but not all of them.

There are members of the family who eat packed lunches or meals away from home.

When some of the family eat one of the day's meals away from home, the meals eaten at home should be planned with extra care to provide those recommended foods which may be difficult to pack into a lunch or to purchase in restaurant meals—or may be expensive to buy in such meals. Good selection from the food groups—milk, vegetables, fruits, lean meats and alternates, whole-grain and enriched cereal products—will assure good nutrition for these members of the family.



There are the aged.

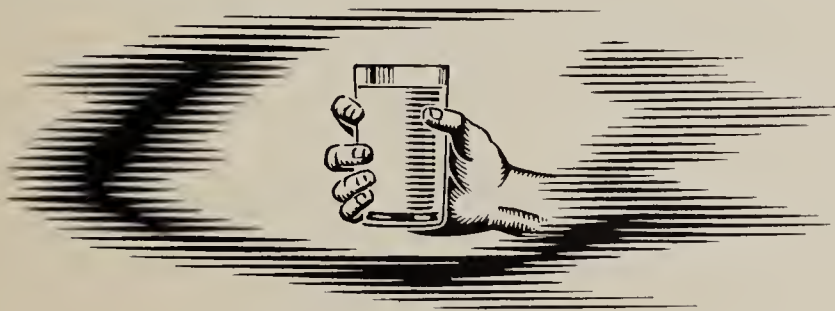
Meals for the elderly can be planned with the others. The caloric intake should be reduced if they are relatively inactive, but maintenance of adequate protein, mineral, and vitamin levels can be some insurance toward a happier, healthier existence. Poor teeth and a less efficient digestive tract may require some change in the consistency and texture of the food, but these changes should not be so extensive that the meals become monotonous.

There are the infants.

For the rapidly increasing nutritive requirements during infancy, foods must be added regularly to supplement the milk intake. The additions for individual infants should be guided by the doctor. Foods commonly recommended to supplement the milk include orange or tomato juice; strained vegetables, enriched or strained whole-grain cereals, whole-grain crackers and hard toast made of whole-grain or enriched bread, eggs, finely chopped lean meats and bacon, cottage cheese, and strained fruits. Chopped foods are substituted gradually as soon as the infant begins to chew. A regular source of vitamin D should be provided at the direction of the doctor.

There are the preschool children.

Meals for young children are fundamentally the same as those planned for the rest of the family. The quart of milk which is needed for the calcium requirement also provides quantities of other nutrients, especially protein, calcium, and riboflavin. This is important to remember because the young child's capacity for food is limited. The foods eaten need to be high in the nutritive values for growth. A variety of food is essential for the development of good food habits. Food with fiber content is essential for the development of good chewing habits. Restriction upon "heavy," very sweet, very fatty foods, and food with little nutritive value except calories contributes to the development and maintenance of good appetites. Continuance of regular medical check-ups through preschool age helps parents see the importance of maintaining food and other living habits that keep children in their best possible health and development.



APPENDIX

TABLE 1

THE NUTRIENTS

Brief and non-technical statements of their importance.

TABLE 2

RECOMMENDED DAILY DIETARY ALLOWANCES

National Research Council.

TABLE 3

NUTRITIVE VALUE OF FOOD GROUPS

Contribution to Daily Food Needs, Moderately Active Woman. This evaluation is the basis for the charts in color, pages 18 and 19.

TABLE 4

FOODS EVALUATED AND APPROXIMATE MEASURES

Specific foods and amounts evaluated in the colored charts and other bar graphs.

TABLE 5

COMMONLY USED FOODS IN THE FOOD GROUPS

A classified list of foods.

REFERENCES

TABLE 1. THE NUTRIENTS

Why are these nutrients essential to maintenance of health?¹

PROTEIN	Builds muscles, blood; needed for growth, repair.
FAT AND CARBOHYDRATE	Furnishes, with protein, food energy (measured as calories).
CALCIUM	Builds bones, teeth; needed for all body tissues and for such functions as clotting of blood, action of muscles and nerves.
IRON	Needed by the body to build red blood.
VITAMIN A	Needed for growth, healthy eyes, skin, tissues.
THIAMINE (B₁)	Needed by body cells to use carbohydrate.
ASCORBIC ACID (C)	Helps to build healthy gums, teeth, bones, other tissues.
RIBOFLAVIN	Promotes health by helping body cells use oxygen.
NIACIN	Needed for proper functioning of the digestive tract and good utilization of food stuffs by the body. ²
VITAMIN D	Needed for well-formed bones, teeth. ³

There are still other nutrients necessary to good nutrition—some known, others unidentified. However, meals which are adequate in the nutrients listed appear to contain sufficient amounts of those not listed. In meal planning, therefore, emphasis should be placed not so much on the individual nutrients as on the simple basic foods which have been shown to be richest in the known nutrients. (Page 5.)

¹Such brief statements merely suggest the reasons the different nutrients are needed. The statements may help you explain to Mrs. James the importance of the food groups that supply the essential nutrients. (For your own information, you are referred to reliable texts for a complete discussion of the functions of the nutrients.)

²Niacin is not included in the various graphs in this booklet due to uncertainty with respect to the need for niacin as such. Apparently at least one other nutrient can interact with a small amount of niacin in such a way as to increase the niacin activity of the diet.

³Vitamin D is produced in the body by the sun rays acting directly on the skin. In most climates, some supplementary source, such as vitamin D milk or fish liver oils, may be recommended for children and for women during pregnancy and lactation, as per the doctor's instructions; also for adults getting little sunshine.

TABLE 2. RECOMMENDED DAILY DIETARY ALLOWANCES, REVISED 1948¹

Food and Nutrition Board, National Research Council

	Calories ²	Protein grams	Cal- cium grams	Iron mg.	Vita- min A I. U. ³	Thia- mine mg. ⁴	Ribo- flavin mg. ⁴	Niacin (Nico- tinic acid) mg. ⁴	As- corbic acid mg.	Vitamin D I. U.
Man (154 lb., 70 kg.)										
Sedentary.....	2400	70	1.0	12 ⁵	5000	1.2	1.8	12	75	6
Physically active.....	3000	70	1.0	12 ⁵	5000	1.5	1.8	15	75	6
With heavy work.....	4500	70	1.0	12 ⁵	5000	1.8	1.8	18	75	6
Woman (123 lb., 56 kg.)										
Sedentary.....	2000	60	1.0	12	5000	1.0	1.5	10	70	6
Moderately active.....	2400	60	1.0	12	5000	1.2	1.5	12	70	6
Very active.....	3000	60	1.0	12	5000	1.5	1.5	15	70	6
Pregnancy (latter half).....	2400 ⁷	85	1.5	15	6000	1.5	2.5	15	100	400
Lactation.....	3000	100	2.0	15	8000	1.5	3.0	15	150	400
Children up to 12 yrs.⁸										
Under 1 yr. ⁹	110/2.2 lb. 3.5/2.2 lb. (1 kg.)		1.0	6	1500	0.4	0.6	4	30	400
1-3 yrs. (27 lb., 12 kg.).....	1200	40	1.0	7	2000	0.6	0.9	6	35	400
4-6 yrs. (42 lb., 19 kg.).....	1600	50	1.0	8	2500	0.8	1.2	8	50	400
7-9 yrs. (58 lb., 26 kg.).....	2000	60	1.0	10	3500	1.0	1.5	10	60	400
10-12 yrs. (78 lb., 35 kg.).....	2500	70	1.2	12	4500	1.2	1.8	12	75	400
Children over 12 yrs.⁸										
Girls, 13-15 yrs. (108 lb., 49 kg.).	2600	80	1.3	15	5000	1.3	2.0	13	80	400
16-20 yrs. (122 lb., 55 kg.).	2400	75	1.0	15	5000	1.2	1.8	12	80	400
Boys, 13-15 yrs. (108 lb., 49 kg.).	3200	85	1.4	15	5000	1.5	2.0	15	90	400
16-20 yrs. (141 lb., 64 kg.).	3800	100	1.4	15	6000	1.7	2.5	17	100	400

¹Objectives toward which to aim in planning practical diets: The recommended allowances can be attained with a good variety of common foods which will also provide other minerals and vitamins for which requirements are less well known.

²Calorie allowances must be adjusted up or down to meet specific needs. The calorie values in the table are therefore not applicable to all individuals but rather represent group averages. The proper calorie allowance is that which over an extended period will maintain body weight or rate of growth at the level most conducive to well-being.

³The allowance depends on the relative amounts of vitamin A and carotene. The allowances of the table are based on the premise that approximately two-thirds of the vitamin A value of the average diet in this country is contributed by carotene and that carotene has half or less than half the value of vitamin A.

⁴For adults (except pregnant and lactating women) receiving diets supplying 2000 calories or less, such as reducing diets, the allowances of thiamine and niacin may be 1 mg. and 10 mg. respectively. The fact that figures are given for different calorie levels for thiamine and niacin does not imply that we can estimate the requirement of these factors within 500 calories, but they are added merely for simplicity of calculation. In the present revision, riboflavin allowances are based on body weight rather than caloric

levels. Other members of the B complex also are required, though no values can be given. Foods supplying adequate thiamine, riboflavin, and niacin will tend to supply sufficient of the remaining B vitamins.

⁵There is evidence that the male adult needs relatively little iron. The need will usually be provided for if the diet is satisfactory in other respects.

⁶The need for supplemental vitamin D by vigorous adults leading a normal life seems to be minimum. For persons working at night and for nuns and others whose habits shield them from the sunlight, as well as for elderly persons, the ingestion of small amounts of vitamin D is desirable.

⁷During the latter part of pregnancy the calorie allowance should increase approximately 20 percent above the preceding level. The value of 2400 calories represents the allowance for pregnant, sedentary women.

⁸Allowances for children are based on the needs for the middle year in each group (as 2, 5, 8, etc.) and are for moderate activity and for average weight at the middle year of the age group.

⁹Needs for infants increase from month to month with size and activity. The amounts given are for approximately 6 to 8 months. The dietary requirements for some of the nutrients such as protein and calcium are less if derived largely from human milk.

Further recommendations on fat, water, salt, iodine, phosphorus, copper, vitamin K, and folic acid are in *Recommended Daily Dietary Allowances, Revised*. National Research Council, Washington, D.C. Reprint and Circular Series, No. 129, October, 1948.

TABLE 3. NUTRITIVE VALUE

CONTRIBUTION TO DAILY FOOD

This evaluation is the basis for the charts, *How the Food Groups*

FOODS ³	AMOUNT ³	WEIGHT gm.	CALORIES		PROTEIN		CALCIUM	
			No.	%	gm.	%	gm.	%
MILK ⁴	1 pint	488	335	14.0	17.0	28.3	.580	58.0
VEGETABLES	3 serv.	ap. 330	224	9.3	7.0	11.7	.098	9.8
FRUIT	2 serv.	ap. 200	109	4.5	1.6	2.7	.027	2.7
EGGS ⁵	1 egg	50	79	3.3	6.4	10.7	.027	2.7
MEAT AND ALTERNATES ⁶	1 serv.	ap. 90	199	8.3	20.4	34.0	.032	3.2
CEREAL AND BREAD	2 serv.	100-120	320	13.3	10.0	16.7	.040	4.0
BUTTER ⁷	2 tbsp.	26	190	7.9	...	...	...	...
Totals:			1456		62.4		.804	
Percentage of Allowance				60.6		104.1		80.4
Allowance—Mod. Act. Woman ²			2400		60.0		1.000	

¹Source of food values unless otherwise indicated: *Food Composition Table for Short Method of Dietary Analysis, Revised*. Eva G. Donelson and Jane M. Leichsenring. Reprinted from J. Am. Diet. Assn. 21:7 (July-Aug.) 1945. (Adaptations have been made in size of certain servings in tables.)

²*Recommended Daily Dietary Allowances, Revised 1948*. National Research Council. Reprint and Circular Series No. 129. October, 1948.

³Foods in minimal recommended amounts: *Guide to Good Eating, Revised*. National Dairy Council. 1948. (See specific foods evaluated, pages 34 and 35.)

OF FOODS IN FOOD GROUPS¹

NEEDS MODERATELY ACTIVE WOMEN²

Combine to Meet the Nutritive Needs of An Adult, pages 18 and 19.

IRON		VITAMIN A		THIAMINE		VITAMIN C		RIBOFLAVIN		NIACIN	
mg.	%	I.U.	%	mg.	%	mg.	%	mg.	%	mg.	%
0.17	1.4	750	15.0	.170	14.2	7.0	10.0	.820	54.7	.43	3.6
2.84	23.7	3904	78.0	.221	18.4	25.5	36.5	.196	13.1	2.30	19.2
1.00	8.3	758	15.2	.090	7.5	40.0	57.1	.063	4.2	.70	5.8
1.40	11.7	570	11.4	.060	5.0	....	....	.170	11.3	.05	.4
3.30	27.5	55	1.1	.195	16.3	....	....	.174	11.6	4.10	34.2
2.40	20.0	....	....	.240	20.0	....	....	.160	10.7	2.40	20.0
....	....	890	17.8	....	....	....	....	....	....	....	....
1.11		6927		.976		72.5		1.583		9.98	
	92.6		138.5		81.4		103.6		105.6		83.2
2.00		5000		1.200		70.0		1.500		12.00	

⁴Newer Knowledge of Milk. National Dairy Council. In revision, 1951.

⁵Tobles of Food Composition in Terms of Eleven Nutrients. U. S. Dept. of Agric. Misc. Pub. No. 572. 1945.

⁶Source of food value of cheese: Newer Knowledge of Cheese. National Dairy Council. 1947.

⁷Vitamin A in Butter. U. S. Dept. of Agric. Misc. Pub. No. 571. 1945.

TABLE 4. FOODS EVALUATED AND APPROXIMATE MEASURES¹

MILK . . . 1 PINT

VEGETABLES . . . 3 SERVINGS²

Green and yellow . . . 1 serving

An average of 7 servings

Green, 4 servings—2 each of green beans, $\frac{2}{3}$ cup, peas, $\frac{1}{2}$ cup, cooked;
Yellow, 2 servings—carrots, $\frac{2}{3}$ cup, sweet potato, $\frac{1}{2}$ large, cooked;
Leafy, 1 serving—kale, spinach, turnip, other greens, $\frac{2}{3}$ cup, cooked.

Others . . . 1 serving

An average of 7 servings

1 serving cabbage, $\frac{2}{3}$ cup, raw or cauliflower, $\frac{1}{2}$ cup, cooked; 1 serving corn,
 $\frac{1}{2}$ cup or large parsnip, cooked; 2 servings other vegetables, $\frac{1}{2}$ cup each,
cooked—beets, eggplant, onions, rutabagas; and 3 servings other vegetables
commonly used raw—2 pieces celery, 8 slices cucumber, or $\frac{1}{8}$ head lettuce.

Potato . . . 1 medium large, white

FRUITS . . . 2 SERVINGS

Citrus or tomato . . . 1 serving

An average of 7 servings

4 servings citrus—medium orange, $\frac{1}{2}$ medium grapefruit, $\frac{1}{2}$ cup juice, or
medium lemon; 3 servings tomato, fresh or canned— $\frac{1}{2}$ cup or small tomato.

Others . . . 1 serving

An average of 7 servings

1 small banana; 1 serving other yellow fruit, fresh, canned, or dried—fresh,
medium peach, 2–3 apricots, or 3 plums; 4 servings other fruit, fresh and
canned, $\frac{1}{2}$ cup each; 1 serving other dried fruit—3–4 dates, $1\frac{1}{2}$ –2 figs,
dried apple, or $\frac{1}{4}$ cup raisins.

TABLE 4. FOODS EVALUATED AND APPROXIMATE MEASURES¹ (Continued)

EGGS . . . 1 MEDIUM EGG

MEAT AND ALTERNATES . . . 1 SERVING

An average of 7 servings

5 servings beef, fowl, lamb, or veal, approximately 3-ounce servings cooked; 1 serving pork or ham, 3-ounce serving cooked; and 1 serving including alternates. This serving represents an average of 2 ounces Cheddar cheese; 1 cup cooked dried beans or peas; 2 tablespoons peanut butter or 8-15 walnuts or 36 peanuts, etc.; and 3 servings fish, approximately 3-ounce servings cooked—cod or haddock—halibut, herring, or whitefish—salmon, canned.

CEREAL AND BREAD . . . 2 SERVINGS

Whole-grain or enriched

One serving includes

2 slices of bread, ounce slices; or an average of an ounce slice of bread and $\frac{1}{2}$ cup cooked cereals, approximately $\frac{2}{3}$ ounce dry weight; or an average of an ounce slice of bread and 1 cup prepared cereals, approximately 1 ounce; or the equivalent in other cereal products.

BUTTER . . . 2 TABLESPOONS

¹The evaluations in all graphs include foods in measures listed unless otherwise indicated.

Source of food values, unless otherwise stated: *Faad Campasitiation Table for Short Methad of Dietary Analysis, Revised*. Eva G. Donelson and Jane M. Leichsenring. Reprinted from J. Am. Diet. Assn. 21:7 (July-Aug.) 1945. The food values for individual foods, graphs pages 22-25, not found in above references, were taken from *Tables of Faad Campasitiation in Terms of Eleven Nutrients*, U. S. Dept. of Agric., Misc. Pub. No. 572, 1945; or from *Faad Values of Partians Cammanly Used*. Bowes and Church. 6th Ed. 1946. (Available from Anna de Planter Bowes, 311 South Juniper Street, Philadelphia 7, Pennsylvania.) Source of food value for ice cream, graph page 7: *Ice Cream . . . It's Faad Value*. National Dairy Council, 1948.

²Food losses in ascorbic acid and thiamine, for canned vegetables, as indicated in *Faad Campasitiation Table for Short Methad of Dietary Analysis*, were calculated on the basis of one-half vegetables canned. Calcium in spinach and beet greens was considered as unavailable.

**TABLE 5. COMMONLY USED FOODS IN THE
FOOD GROUPS**

MILK	Whole milk, skim milk, buttermilk, evaporated and dried milks, cottage cheese, Cheddar and all cheeses, ice cream
VEGETABLES	
Green	Asparagus, garden peas, green peppers, green beans
Leafy	Broccoli, brussel sprouts, green cabbage, kale, leaf lettuce, spinach, all green leaves
Yellow	Carrots, pumpkin, squash (winter), sweet potatoes, tomatoes
Potatoes	White and sweet
Others	All others—beets, cauliflower, celery, eggplant, onions, etc.
FRUITS	
Citrus	Grapefruit, lemons, limes, oranges, tangerines; (tomatoes)
Dried	Apricots, prunes, raisins, dates, figs (other dried fruits do not have as high an iron content)
Highly Seasonal	Berries, melons
Others	All others—apple, banana, cherry, peach, pear, pineapple, etc.
EGGS	Fresh, cold storage, reconstituted dried, frozen
LEAN MEATS AND ALTERNATES	Beef, lamb, veal, pork, fish, poultry (all grades and cuts); glandular meats especially liver, also kidney, heart, sweetbreads, brains, tongue; cheese; eggs; dried legumes—beans, peas, lentils, soybeans; nuts
CEREAL PRODUCTS	
Whole-grain and Enriched	Breads, breakfast cereals, crackers, flours, meals made from all unrefined grain products and from refined grain products to which minerals and vitamins have been added according to standards
Refined	Breads, breakfast cereals, crackers, flours, meals made from refined grain products
FATS	
Rich in Vitamin A	Such as butter, cream, cream cheese, etc.
Without Vitamin A	Bacon, lard, salad oils, salt pork, vegetable fats, etc.
SUGAR AND SWEETS	Sugar, syrups, jellies, jams, commercial gelatin desserts, icings (molasses and honey have some iron and B vitamins)
ACCESSORIES	Coffee, tea, herbs, seasonings, spices, relishes (foods primarily used for flavor and palatability)

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References indicated in footnotes throughout the booklet.

TO THE READER:

The material in this booklet has been organized by Aileen Merwin, B.S., M.S., formerly in charge of instruction in nutrition and dietetics, Frances Payne Bolton School of Nursing, Western Reserve University, Cleveland. The author makes grateful acknowledgement to the many public health nurses and to others in family life education whose frank discussions in study groups under her direction have provided much of the background for *Nutrition for Every Day Use.*

